

=> d his

(FILE 'HOME' ENTERED AT 08:41:18 ON 05 AUG 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 08:41:28 ON 05 AUG 2003

SEA OXIDASE OR OXYGENASE

-----  
18793 FILE ADISCTI  
391 FILE ADISINSIGHT  
525 FILE ADISNEWS  
10137 FILE AGRICOLA  
4084 FILE ANABSTR  
2218 FILE AQUASCI  
2492 FILE BIOBUSINESS  
271 FILE BIOCOMMERCE  
97963 FILE BIOSIS  
6296 FILE BIOTECHABS  
6296 FILE BIOTECHDS  
20754 FILE BIOTECHNO  
17783 FILE CABA  
7822 FILE CANCERLIT  
118015 FILE CAPLUS  
2258 FILE CEABA-VTB  
78 FILE CEN  
159 FILE CIN  
2454 FILE CONFSCI  
628 FILE CROPB  
1221 FILE CROPU  
4411 FILE DDFB  
7297 FILE DDFU  
9660 FILE DGENE  
4411 FILE DRUGB  
4 FILE DRUGLAUNCH  
13 FILE DRUGMONOG2  
186 FILE DRUGNL  
9216 FILE DRUGU  
157 FILE DRUGUPDATES  
535 FILE EMBAL  
66493 FILE EMBASE  
20042 FILE ESBIODBASE  
1353 FILE FEDRIP  
2 FILE FOMAD  
94 FILE FOREGE  
2387 FILE FROSTI  
3912 FILE FSTA  
83821 FILE GENBANK  
241 FILE HEALSAFE  
3461 FILE IFIPAT  
9777 FILE JICST-EPLUS  
94 FILE KOSMET  
18523 FILE LIFESCI  
22 FILE MEDICONF  
88570 FILE MEDLINE  
1630 FILE NIOSHTIC  
857 FILE NTIS  
7 FILE NUTRACEUT  
584 FILE OCEAN  
31519 FILE PASCAL  
419 FILE PHAR

131 FILE PHARMAML  
 2 FILE PHIC  
 375 FILE PHIN  
 1215 FILE PROMT  
 49 FILE RDISCLOSURE  
 69665 FILE SCISEARCH  
 10 FILE SYNTHLINE  
 60292 FILE TOXCENTER  
 19973 FILE USPATFULL  
 594 FILE USPAT2  
 54 FILE VETB  
 276 FILE VETU  
 6214 FILE WPIDS  
 6214 FILE WPINDEX  
 L1 QUE OXIDASE OR OXYGENASE  
 -----

FILE 'CAPLUS, BIOSIS, MEDLINE, SCISEARCH, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIODBASE, USPATFULL' ENTERED AT 08:42:34 ON 05 AUG 2003

L2 4940 S L1 AND (PHENOL OXIDASE)  
 L3 278 S L2 AND (MUTANT OR VARIANT)  
 L4 11 S L3 AND (POSITION 254 OR 254)  
 L5 11 DUP REM L4 (0 DUPLICATES REMOVED)  
 L6 242 S L3 AND MUTANT  
 L7 149 DUP REM L6 (93 DUPLICATES REMOVED)  
 L8 17 S L7 AND STACHYBOTRYS

=> s l2 and precursor  
 L9 219 L2 AND PRECURSOR

=> d l9 ibib ab 219

L9 ANSWER 219 OF 219 USPATFULL on STN  
 ACCESSION NUMBER: 78:30579 USPATFULL  
 TITLE: Water-dispersible protein/polyurethane reaction product  
 INVENTOR(S): Hartdegen, Frank Joseph, Columbia, MD, United States  
 Swann, Wayne Elliott, Pasadena, MD, United States  
 PATENT ASSIGNEE(S): W. R. Grace & Co., New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4094744		19780613
APPLICATION INFO.:	US 1976-749430		19761210 (5)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1976-743035, filed on 18 Nov 1976, now Defensive Publication No. which is a continuation-in-part of Ser. No. US 1976-660982, filed on 24 Feb 1976, now abandoned which is a continuation-in-part of Ser. No. US 1975-585674, filed on 10 Jun 1975, now abandoned		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Naff, David M.		
LEGAL REPRESENTATIVE:	Pippenger, Philip M., McDowell, Jr., William W.		
NUMBER OF CLAIMS:	19		
EXEMPLARY CLAIM:	8,10		
LINE COUNT:	965		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An aqueous dispersion of a biologically-active protein bound to polyurethane is formed by (a) admixing the protein and an isocyanate-capped liquid polyurethane prepolymer to form a solution; and (b) dispersing the solution in water.

=> d his

(FILE 'HOME' ENTERED AT 08:41:18 ON 05 AUG 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 08:41:28 ON 05 AUG 2003

SEA OXIDASE OR OXYGENASE

-----  
18793 FILE ADISCTI  
391 FILE ADISINSIGHT  
525 FILE ADISNEWS  
10137 FILE AGRICOLA  
4084 FILE ANABSTR  
2218 FILE AQUASCI  
2492 FILE BIOBUSINESS  
271 FILE BIOCOMMERCE  
97963 FILE BIOSIS  
6296 FILE BIOTECHABS  
6296 FILE BIOTECHDS  
20754 FILE BIOTECHNO  
17783 FILE CABA  
7822 FILE CANCERLIT  
118015 FILE CAPLUS  
2258 FILE CEABA-VTB  
78 FILE CEN  
159 FILE CIN  
2454 FILE CONFSCI  
628 FILE CROPB  
1221 FILE CROPU  
4411 FILE DDFB  
7297 FILE DDFU  
9660 FILE DGENE  
4411 FILE DRUGB  
4 FILE DRUGLAUNCH  
13 FILE DRUGMONOG2  
186 FILE DRUGNL  
9216 FILE DRUGU  
157 FILE DRUGUPDATES  
535 FILE EMBAL  
66493 FILE EMBASE  
20042 FILE ESBIODBASE  
1353 FILE FEDRIP  
2 FILE FOMAD  
94 FILE FOREGE  
2387 FILE FROSTI  
3912 FILE FSTA  
83821 FILE GENBANK  
241 FILE HEALSAFE  
3461 FILE IFIPAT  
9777 FILE JICST-EPLUS  
94 FILE KOSMET  
18523 FILE LIFESCI  
22 FILE MEDICONF  
88570 FILE MEDLINE  
1630 FILE NIOSHTIC  
857 FILE NTIS  
7 FILE NUTRACEUT  
584 FILE OCEAN  
31519 FILE PASCAL  
419 FILE PHAR  
131 FILE PHARMAML

2 FILE PHIC  
 375 FILE PHIN  
 1215 FILE PROMT  
 49 FILE RDISCLOSURE  
 69665 FILE SCISEARCH  
 10 FILE SYNTHLINE  
 60292 FILE TOXCENTER  
 19973 FILE USPATFULL  
 594 FILE USPAT2  
 54 FILE VETB  
 276 FILE VETU  
 6214 FILE WPIDS  
 6214 FILE WPINDEX

L1 QUE OXIDASE OR OXYGENASE  
 -----

FILE 'CAPLUS, BIOSIS, MEDLINE, SCISEARCH, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIODBASE, USPATFULL' ENTERED AT 08:42:34 ON 05 AUG 2003

L2 4940 S L1 AND (PHENOL OXIDASE)  
 L3 278 S L2 AND (MUTANT OR VARIANT)  
 L4 11 S L3 AND (POSITION 254 OR 254)  
 L5 11 DUP REM L4 (0 DUPLICATES REMOVED)  
 L6 242 S L3 AND MUTANT  
 L7 149 DUP REM L6 (93 DUPLICATES REMOVED)  
 L8 17 S L7 AND STACHYBOTRYS  
 L9 219 S L2 AND PRECURSOR

=> s l2 and (muta?)

L10 303 L2 AND (MUTA?)

=> dup rem l10

PROCESSING COMPLETED FOR L10

L11 184 DUP REM L10 (119 DUPLICATES REMOVED)

=> d l11 ibib ab 180-184

L11 ANSWER 180 OF 184 MEDLINE on STN

ACCESSION NUMBER: 68202034 MEDLINE  
 DOCUMENT NUMBER: 68202034 PubMed ID: 4967267  
 TITLE: **Phenol oxidase** characteristics in  
**mutants** of *Drosophila melanogaster*.  
 AUTHOR: Mitchell H K; Weber U M; Schaar G  
 SOURCE: GENETICS, (1967 Oct) 57 (2) 357-68.  
 Journal code: 0374636. ISSN: 0016-6731.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 196806  
 ENTRY DATE: Entered STN: 19900101  
 Last Updated on STN: 19900101  
 Entered Medline: 19680610

L11 ANSWER 181 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1966:450167 CAPLUS  
 DOCUMENT NUMBER: 65:50167  
 ORIGINAL REFERENCE NO.: 65:9413b-c  
 TITLE: **Phenol oxidases** and *Drosophila*  
 development  
 AUTHOR(S): Mitchell, Herschel K.  
 CORPORATE SOURCE: California Inst. of Technol., Pasadena  
 SOURCE: Journal of Insect Physiology (1966), 12(7), 755-65  
 CODEN: JIPHAF; ISSN: 0022-1910  
 DOCUMENT TYPE: Journal

LANGUAGE: English

AB cf. preceding abstr. Studies of **phenol oxidase** (I) activation at different stages of development in *D. melanogaster* have shown that max. activity is achieved in late 3rd-instar larvae. The straw5 **mutant** has at least as high a potential for **oxidase** production as the wild type and, in the **mutant**, the potential decreases much less during the period when melanization should occur. However, during this period the rate of I activation is much less in the **mutant**, a fact that can account for the pale bristle phenotype. Heat-induced blond phenocopies show activation behavior similar to that of the straw5 **mutant** and the results demonstrate the existence of a crit. sensitive period concerned with melanine production several hrs. before appearance of the pigment. In general, it appears that most of the I protein components are synthesized in the larvae and retained for use in melanine production some 3-4 days later. 16 references.

L11 ANSWER 182 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 49

ACCESSION NUMBER: 1964:5466 CAPLUS  
DOCUMENT NUMBER: 60:5466  
ORIGINAL REFERENCE NO.: 60:987f-g  
TITLE: The action of antiserums on the **phenol oxidases** of *Podospira anserina*  
AUTHOR(S): Esser, Karl  
CORPORATE SOURCE: Univ. Cologne-Lindenthal, Germany  
SOURCE: Naturwissenschaften (1963), 50(7), 576-7  
CODEN: NATWAY; ISSN: 0028-1042  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Enzyme prepns. were partially purified by pptn. between 45 and 70% satd. (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and were injected into rabbits over several weeks. In antibody tests the enzyme was pptd. but not inactivated. The enzyme was pptd. more rapidly than was the total protein. The antiserum contained 5.25 antienzyme units/ml. As only a single antigen-antienzyme system was concerned the method may be used to det. the specificity of **phenol oxidases** from wild and **mutant** strains of the organism.

L11 ANSWER 183 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1964:54703 CAPLUS  
DOCUMENT NUMBER: 60:54703  
ORIGINAL REFERENCE NO.: 60:9663e-h  
TITLE: Tyrosine metabolism of insects. VIII. Sclerotization of cuticle in the wild strain and albino **mutant** of *Schistocerca gregaria*  
AUTHOR(S): Karlson, P.; Schlossberger-Raecke, I.  
CORPORATE SOURCE: Univ. Munich, Germany  
SOURCE: Journal of Insect Physiology (1962), 8, 441-52  
CODEN: JIPHAF; ISSN: 0022-1910  
DOCUMENT TYPE: Journal  
LANGUAGE: German

AB cf. CA 57, 14303h; 59, 6665e. The albino **mutant** of *S. gregaria* differs from the wild strain in having no melanin while the sclerotization of the cuticle is almost unaltered. However, the precursor of melanins and sclerotins is 3,4-dihydroxyphenylalanine (I). To det. differences in the tyrosine (II) metabolism of these 2 strains, 3-44 mg. DL-tyrosine- $\alpha$ -<sup>14</sup>C (sp. activity 0.5 mc./millimole) or DL-dihydroxyphenylalanine  $\alpha$ -<sup>14</sup>C (sp. activity 0.5 mc./millimole) per animal was injected before the sclerotization. Animals were sacrificed either just before the formation of the cuticle or 3, 12, 24, or 48 hrs. later. The radioactivity of the cuticle and the body content was detd. sep. after the combustion to CO<sub>2</sub> and the pptn. of labeled BaCO<sub>3</sub>. The **phenol oxidase** (III) activity was detd. by the following method. Each locust was homogenized with 3000 g. 5M pH 6.0 phosphate buffer, the mixt. was centrifuged 15 min., the ppt. dissolved in 41,000 g.

phosphate buffer, and centrifuged 2 hrs. An aliquot of 1.5 ml. supernatant and 1 mg. I or II in 0.5 ml. soln. was used for the manometric detn. of O. The body content of II was detd. by the method of Lugg (CA 31, 84443) after treatment with 4.2N HClO<sub>4</sub>. The II metabolism of the mutant and the wild strain indicated that there were no qual. but only minor quant. differences in II content, III activity, and incorporation of radioactive precursors into the sclerotin of the cuticle. The mutation to albino influenced only processes in melanized parts of the cuticle, and the cuticle was not affected. Some observations on the incorporation of metabolites into the ecdysial membrane were reported and discussed. 20 references.

L11 ANSWER 184 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1954:79627 CAPLUS  
DOCUMENT NUMBER: 48:79627  
ORIGINAL REFERENCE NO.: 48:14004i,14005a-b  
TITLE: Blood phenol oxidase in Bombyx  
mori. III. A strain showing low enzyme activity  
AUTHOR(S): Ito, Toshio  
CORPORATE SOURCE: Sericult. Expt. Sta., Tokyo  
SOURCE: Japan. J. Genet. (1954), 29, 43-8  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The activity of phenol oxidase in a mutant strain (I) and normal one (II) were compared at the stages, 4th day in 4th-instar (III), 2nd day in 5th-instar (IV), 5th day in 5th-instar (V), late spinning period (VI), just after pupation (VII), and 5th day in pupa (VIII). In a manometric expt. when tyrosine was added, the O<sub>2</sub> uptake during III, IV, V, VI, VII, and VIII for the blood of I and II was 7, 27; 115, 147; 54, 134; 2, 48; 28, 125; and 3, 22; with catechol added 13, 66; 123, 158; 68, 119; 3, 76; 42, 130; and 3 .mu.l., and 53 .mu.l., resp. In a colorimetric expt., when tyrosine was added the optical d. during III, IV, V, VI, VII, and VIII for I and II was 0.47, 0.76; 0.69, 0.93; 0.75, 1.03; 0.48, 0.96; 0.85, 0.75; and 0.12, 0.26 and when catechol was added 0.43; 0.43; 0.40, 0.43; 0.39, 0.39; 0.42, 0.53; 0.56, 0.55; and 0.34, 0.64, resp.

=> log y

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> e phenol oxidizing enzyme/CN

E1	1	PHENOL OXIDASE INHIBITOR POI (32-TYROSINE) (HOUSEFLY)/CN
E2	1	PHENOL OXIDASE INHIBITOR POI (HOUSEFLY REDUCED)/CN
E3	0 -->	PHENOL OXIDIZING ENZYME/CN
E4	1	PHENOL OXIDIZING ENZYME (STACHYBOTRYS CHARTARUM STRAIN MUCL 38898 GENE SPOB)/CN
E5	1	PHENOL POLYETHER WITH ETHYLENE OXIDE/CN
E6	1	PHENOL POLYETHER WITH PROPYLENE OXIDE/CN
E7	1	PHENOL POLYMER/CN
E8	1	PHENOL PROPIONATE/CN
E9	1	PHENOL PURPLE/CN
E10	1	PHENOL RADICAL CATION/CN
E11	1	PHENOL RADICAL CATION, MONOHYDRATE/CN
E12	1	PHENOL RADICAL MONOCATION/CN

=> s E4;D

L1	1	"PHENOL OXIDIZING ENZYME (STACHYBOTRYS CHARTARUM STRAIN MUCL 38898 GENE SPOB)"/CN
----	---	---

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS

RN 315722-59-9 REGISTRY

CN Oxygenase, monophenol mono- (Stachybotrys chartarum strain MUCL 38898 gene spoB isoenzyme B) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 2: PN: US6168936 SEQID: 2 claimed protein

CN **Phenol oxidizing enzyme (Stachybotrys chartarum strain MUCL 38898 gene spoB)**

FS PROTEIN SEQUENCE

MF Unspecified

CI MAN

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

=> d 17 ibib ab 110-119

L7 ANSWER 110 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75759 Protein DGENE

TITLE: Detergent composition containing **phenol-**

**oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of **Stachybotrys** -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M;  
Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314

52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the D562G **variant** of

**Stachybotrys** chartarum MUCL 38898 phenol oxidase B. The

**variant** was obtained using site-directed mutagenesis. Claimed

detergent compositions of the invention comprise at least 1 surfactant

and an enzymatically active **variant** of the phenol oxidase B

enzyme, which may include the present amino acid substitution. The

compositions are useful as laundry and dishwashing products, particularly

for removing stains from fabrics, or generally to oxidise coloured

compounds. They are also useful for bleaching paper and pulp, in personal

care products, foods, animal feeds, textiles, leather, contact lens

cleaners, for starch production, for deodourisation, sanitation or

waste-water treatment, as biocatalysts, in connection with biopolymers,

packaging, adhesives or biosensors, in surface modification, in

production of primary alcohols, and as antimicrobials. **Variant**

enzymes may have increased phenol-oxidising activity at high pH compared

with the parent enzyme, and especially have an optimum pH of at least 9.

They may also show increased productivity, oxidative, thermal, alkaline,

or proteolytic stability, different substrate specificity or different

catalytic activity. Note: The present sequence is not shown in the

specification, but is derived from the **Stachybotrys** wild-type

phenol oxidase B sequence given in figure 2 (see ABB75754).

L7 ANSWER 111 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75758 Protein DGENE

TITLE: Detergent composition containing **phenol-**

**oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of **Stachybotrys** -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M;  
Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314

52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the G115S **variant** of

**Stachybotrys** chartarum MUCL 38898 phenol oxidase B. The

**variant** was obtained using site-directed mutagenesis. Claimed

detergent compositions of the invention comprise at least 1 surfactant

and an enzymatically active **variant** of the phenol oxidase B

enzyme, which may include the present amino acid substitution. The



compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. **Variant** enzymes may have increased phenol-oxidising activity at high pH compared with the parent enzyme, and especially have an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity or different catalytic activity. Note: The present sequence is not shown in the specification, but is derived from the *Stachybotrys* wild-type phenol oxidase B sequence given in figure 2 (see ABB75754).

L7 ANSWER 112 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75757 Protein DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of *Stachybotrys* -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the N391S **variant** of

*Stachybotrys* chartarum MUCL 38898 phenol oxidase B. The

**variant** was obtained using site-directed mutagenesis. Claimed

detergent compositions of the invention comprise at least 1 surfactant

and an enzymatically active **variant** of the phenol oxidase B

enzyme, which may include the present amino acid substitution. The

compositions are useful as laundry and dishwashing products, particularly

for removing stains from fabrics, or generally to oxidise coloured

compounds. They are also useful for bleaching paper and pulp, in personal

care products, foods, animal feeds, textiles, leather, contact lens

cleaners, for starch production, for deodourisation, sanitation or

waste-water treatment, as biocatalysts, in connection with biopolymers,

packaging, adhesives or biosensors, in surface modification, in

production of primary alcohols, and as antimicrobials. **Variant**

enzymes may have increased phenol-oxidising activity at high pH compared

with the parent enzyme, and especially have an optimum pH of at least 9.

They may also show increased productivity, oxidative, thermal, alkaline,

or proteolytic stability, different substrate specificity or different

catalytic activity. Note: The present sequence is not shown in the

specification, but is derived from the *Stachybotrys* wild-type

phenol oxidase B sequence given in figure 2 (see ABB75754).

L7 ANSWER 113 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75756 Peptide DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of *Stachybotrys* -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p  
APPLICATION INFO: WO 2001-EP9928 20010824  
PRIORITY INFO: EP 2000-203084 20000907  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
OTHER SOURCE: 2002-339800 [37]

AB The present sequence is a peptide fragment of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B, obtained by endoLysC digestion of the isolated enzyme. A degenerate PCR primer (see ABL53884) based on this peptide sequence was used to isolate the phenol oxidase B gene (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of a precursor phenol oxidising enzyme of **Stachybotrys** sp., such as the present phenol oxidase B enzyme and its **variants** (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 114 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75755 Peptide DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of **Stachybotrys** -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is a peptide fragment of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B, obtained by endoLysC digestion of the isolated enzyme. A degenerate PCR primer (see ABL53883) based on this peptide sequence was used to isolate the phenol oxidase B gene (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of a precursor phenol oxidising enzyme of **Stachybotrys** sp., such as the present phenol oxidase B enzyme and its **variants** (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 115 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75754 Protein DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of **Stachybotrys** -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the protein sequence of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B. Claimed detergent compositions

comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of *Stachybotrys* sp., especially phenol oxidase B enzyme or its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. The variant enzymes have increased phenol-oxidising activity at high pH compared with the parent enzyme, especially having an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity and different catalytic activity.

L7 ANSWER 116 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53884 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of *Stachybotrys* -  
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.  
(UNIL) UNILEVER PLC.  
(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is a PCR primer based on an isolated peptide fragment (see ABB75756) of *Stachybotrys chartarum* MUCL 38898 phenol oxidase B. The primer was used in the PCR amplification of *S. chartarum* genomic DNA, isolating the phenol oxidase B gene, **spoB** (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of *Stachybotrys* sp., such as the present phenol oxidase B enzyme and its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 117 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53883 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of *Stachybotrys* -  
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.  
(UNIL) UNILEVER PLC.  
(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is a PCR primer based on an isolated peptide fragment (see ABB75755) of *Stachybotrys chartarum* MUCL 38898

phenol oxidase B. The primer was used in the PCR amplification of *S. chartarum* genomic DNA, isolating the phenol oxidase B gene, **spoB** (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of a precursor phenol oxidising enzyme of *Stachybotrys* sp., such as the present phenol oxidase B enzyme and its **variants** (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 118 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53882 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of *Stachybotrys* -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314

52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the **spoB** gene of *Stachybotrys chartarum* MUCL 38898, encoding phenol oxidase B (see ABB75754). The gene was obtained by PCR amplification of genomic DNA using degenerate primers (see ABL53883-84) based on isolated peptide fragments of the enzyme. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of a precursor phenol oxidising enzyme of *Stachybotrys* sp., such as the phenol oxidase B enzyme or its **variants** (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. The **variant** enzymes have increased phenol-oxidising activity at high pH compared with the parent enzyme, especially having an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity and different catalytic activity.

L7 ANSWER 119 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53881 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,

derived from a precursor enzyme of *Stachybotrys* -

INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H

PATENT ASSIGNEE: (UNIL) UNILEVER NV.

(UNIL) UNILEVER PLC.

(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314

52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the **spoB** gene of **Stachybotrys chartarum** MUCL 38898, encoding phenol oxidase B (see ABB75754). The gene was obtained by PCR amplification of genomic DNA using degenerate primers (see ABL53883-84) based on isolated peptide fragments of the enzyme. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of a precursor phenol oxidising enzyme of **Stachybotrys** sp., such as the phenol oxidase B enzyme or its **variants** (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. The **variant** enzymes have increased phenol-oxidising activity at high pH compared with the parent enzyme, especially having an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity and different catalytic activity.